UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/645,921	08/20/2003	Sai Suresh Ganesamoorthi	2705-282	9294

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EXAMINER
SHAND, ROBERTA A

ART UNIT	PAPER NUMBER
2616	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

PTOL-90A (Rev. 04/07)

	Application No.	Applicant(s)
Office Action Summary	10/645,921	GANESAMOORTHI ET AL.
	Examiner	Art Unit	
	Roberta A. Shand	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on _20 August 2003_.

2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) _1-23_ is/are pending in the application.

   4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) _1-23_ is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

   Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

   Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   a) ☐ All b) ☐ Some * c) ☐ None of:

   1. ☐ Certified copies of the priority documents have been received.

   2. ☐ Certified copies of the priority documents have been received in Application No. _____.

   3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

   * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
   Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
   Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Office Action Summary

Claim Rejections - 35 USC § 103

1.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

2.   Claims 1-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Knappe

(U.S. 6603774) in view of Ben Nun (U.S. 6928482 B1).

3.   Regarding claim 1, Knappe teaches a method of allocating tasks to a plurality of DSPs to

handle calls in a voice gateway that receives calls (fig. 1, col. 2, line 41 – col. 3, line 6), the calls

utilizing a plurality of codecs, at least some of which utilize different amounts of DSP resources,

I said method including the steps of: first determining if a particular call can be assigned to a

DSP on a best fit basis (fig. 1, col. 3, lines 7-56).

4.   Knappe does not teach if a call can not be assigned on a best fit basis, assigning said

particular call on a load balancing basis so as to balance the load on the plurality of DSPs.

5.   Ben Nun teaches (fig. 8) if a call cannot be assigned on a best fit basis (S830, no match

found) assigning said particular call on a load balancing basis (S840) so as to balance the load on

the plurality of DSPs (processors). It would have been obvious to one of ordinary skill in the art

to adapt load balancing taught by Ben Num to Knappe's system to avoid loss or congestion

within the system.

6.   Regarding claim 2, Knappe teaches a system for allocating a plurality of DSPs to handle

calls in a voice gateway that receives calls (fig. 1, col. 2, line 41 – col. 3, line 6), said calls

utilizing a plurality of codecs, at least some of said codecs requiring different amounts of DSP

resources, said system including: means for first determining if a particular call can be assigned

to a DSP on a best fit basis (fig. 1, col. 3, lines 7-56).

7.   Knappe does not teach means operable if a call can not be assigned on a best fit basis, for

assigning the call on a load balance basis so as to balance the load on the plurality of DSPs.

8.   Ben Nun teaches (fig. 8) means operable if a call can not be assigned on a best fit basis

(S830, no match found), for assigning the call on a load balance basis (S840) so as to balance the

load on the plurality of DSPs (processors). It would have been obvious to one of ordinary skill

in the art to adapt load balancing taught by Ben Num to Knappe's system to avoid loss or

congestion within the system.

9.   Regarding claim 3, Knappe teaches (fig. 1) a method of allocating a plurality of DSPs to

handle calls in a voice gateway (16, 20), said calls utilizing a plurality of different codecs, said

codecs requiring a plurality of different amounts of DSP resources, said codec being arranged in

resource requirement groups, the codecs in each resource requirement group requiring

substantially the same amount of resources, said method including the steps of: first determining

if the call can be assigned to a DSP on a best fit basis utilizing a best fit pool which indicates the

DSPs that would be fully loaded by a call using a codec in the associated resource group (col. 2,

line 41 – col. 3, line 56).

10.   Knappe does not teach if the call can not be assigned on a best fit basis, assigning the call

to a DSP utilizing a load balancing pool, which indicates the number of calls on each DSP.

11.   Ben Nun teaches (fig. 8) if the call can not be assigned on a best fit basis (S830, no match

found), assigning the call to a DSP (processor) utilizing a load balancing (S840) pool, which

indicates the number of calls on each DSP (processor). It would have been obvious to one of

ordinary skill in the art to adapt load balancing taught by Ben Num to Knappe's system to avoid

loss or congestion within the system.

12.   Regarding claim 4, Knappe teaches (fig. 1) a system for allocating a plurality of DSPs to

handle calls in a voice gateway (16, 20), said calls utilizing a plurality of different codecs, said

codecs requiring a plurality of different amounts of DSP resources, said codec being arranged in

resource requirement groups, the codecs in each resource requirement group requiring

substantially the same amount of resources, said system including: means for first determining if

the call can be assigned to a DSP on a best fit basis (col. 2, line 41 – col. 3, line 56) utilizing a

best fit pool which indicates the DSPs that would be fully loaded by a call using a codec in the

associated resource group.

13.   Knappe does not teach if a call can not be assigned on a best fit basis, for assigning the

call to a DSP utilizing a load balancing pool, which indicates the number of calls on each DSP.

14.   Ben Nun teaches if a call can not be assigned on a best fit basis (fig. 8, S830, match), for

assigning the call to a DSP (processor) utilizing a load balancing pool (S840), which indicates

the number of calls on each DSP (processor). It would have been obvious to one of ordinary

skill in the art to adapt load balancing taught by Ben Num to Knappe's system to avoid loss or

congestion within the system.

15.   Regarding claim 5, Knappe teaches (fig. 1) a method of allocating a plurality of resources

to handle tasks, said tasks utilizing a plurality of different amounts of resources, said tasks being

arranged in resource requirement groups, the tasks in each resource requirement group requiring

substantially the same amount of resources (col. 2, line 41 – col. 3, line 6; col. 4, lines 31-49),

said method including the steps of: first determining if a task can be assigned to a resource on a

best fit basis utilizing a best fit pool which indicates the resources that would be substantially

fully loaded by a task in the associated resource group (col. 3, lines 7 – 56).

16.   Knappe does not teach if a task can not be assigned on a best fit basis, assigning the task

to a resource utilizing a load balancing pool, which indicates the number of tasks, assigned to

each resource.

17.   Ben Num teaches (fig. 8) if a task can not be assigned on a best fit basis (S830, match),

assigning the task to a resource utilizing a load balancing (S840) pool, which indicates the

number of tasks, assigned to each resource. It would have been obvious to one of ordinary skill

in the art to adapt load balancing taught by Ben Num to Knappe's system to avoid loss or

congestion within the system.

18.   Regarding claim 6, Knappe inherently teaches the resource requirement groups take into

account which codecs have the same first channel penalty, because the channel penalty takes into

account the distribution of bandwidth (the encoding metric).

19.   Regarding claim 7, Knappe teaches (fig. 1) a method of allocating tasks to a plurality of DSPs to handle calls in a voice gateway (16, 20) that receives calls, said calls utilizing a plurality of different codecs, at least some of said codecs requiring different amounts of DSP resources method including the steps of: establishing a best fit pool which has a number of codec resource groups, the codecs in each codec resource group utilizing the same amount of DSP resource (col. 4, lines 31-49), and for each particular resource group indicating which DSPs would be fully loaded, first determining if a particular call can be assigned to a DSP based on the information in the best fit pool (col. 2, line 41 – col. 3, line 6).

20.   Knappe does not teach if they were assigned a call using a codec in the particular resource group, establishing a load balancing pool which indicates the number of calls on each codec, and if a call can not be assigned on a best fit basis, assigning said particular call on a load balancing basis using the information in said load balancing pool.

21.   Ben Nun teaches fig. 8) if they were assigned a call using a codec in the particular resource group, establishing a load balancing pool which indicates the number of calls on each codec, and if a call can not be assigned on a best fit basis (S830, match), assigning said particular call on a load balancing basis (S840) using the information in said load balancing pool. It would have been obvious to one of ordinary skill in the art to adapt load balancing taught by Ben Num to Knappe's system to avoid loss or congestion within the system.

22.   Regarding claim 8 Knappe teaches a system for allocating tasks to a plurality of DSPs to handle calls in a voice gateway (16, 20) that receives calls, said calls utilizing a plurality of different coders, at least some of said codecs requiring different amounts of DSP resources, said

system including: a best fit pool which has a number of codec resource groups, the coders in

each codec resource group utilizing the same amount of DSP resource to handle a call, and for

each particular resource group indicating which DSPs would be fully loaded if they were

assigned a call using a codec in the particular resource group, means for determining if a

particular call can be assigned to a DSP based on the information in the best fit pool (col. 2, line

41 – col. 3, line 6).

23.   Knappe does not teach a load balancing pool which indicates the number of calls on each

codec, and means operable if a call can not be assigned on a best fit basis, for assigning said

particular call on a load balancing basis using the information in said load balancing pool.

24.   Ben Nun teaches a load balancing pool which indicates the number of calls on each

codec, and means operable if a call can not be assigned on a best fit basis (S830, match) for

assigning the particular call on a load balancing basis (S840) using the information in said load

balancing pool. It would have been obvious to one of ordinary skill in the art to adapt load

balancing taught by Ben Num to Knappe's system to avoid loss or congestion within the system.

25.   Regarding claim 9, Knappe teaches (col. 2, line 41 – col. 3, line 6) the calls are assigned

on a best fit basis using a best fit pool.

26.   Regarding claim 10, Knappe teaches (fig. 1) the best fit pool has a number of codec

resource groups, the codecs (17B, 19B) in each codec resource group utilizing the same amount

of DSP resource, and for each particular resource group said pool indicates which DSPs would

be fully loaded if they were assigned a call using a codec in the particular resource group (col. 3, line 15-67).

27.   Regarding claim 11, Ben Nun teaches (fig. 8) the calls are assigned on a load balancing basis using a load balancing pool.

28.   Regarding claim 12, (fig. 8) the load balancing pool indicates the number of calls on each codec.

29.   Regarding claim 13, Knappe inherently teaches the codecs in each resource group have the same first channel penalty, because the channel penalty takes into account the distribution of bandwidth (the encoding metric).

30.   Regarding claim 14, Knappe teaches (col. 3, lines 15-67) the calls are assigned on a best fit basis using a best fit pool.

31.   Regarding claim 15, Knappe teaches the best fit pool has a number of codec resource groups, the codecs in each codec resource group utilizing the same amount of DSP resource (col. 2, line 41 – col. 3, line 6; col. 4, lines 31-49), and for each particular resource group said pool indicates which DSPs would be fully loaded if they were assigned a call using a codec in the particular resource group (fig. 1).

32.   Regarding claim 16, Ben Nun teaches (fig. 8) the calls are assigned on a load balancing

basis using a load balancing pool.

33.   Regarding claim 17 Ben Nun teaches (fig. 8) the load balancing pool indicates the

number of calls on each codec.

34.   Regarding claim 18, Knappe inherently the codecs in each resource group have the same

first channel penalty, because the channel penalty takes into account the distribution of

bandwidth (the encoding metric).

35.   Regarding claim 19, Knappe inherently teaches the best fit pool also indicates for each

particular resource group the DSPs that are executing calls that have a first channel penalty

corresponding to the first channel penalty of the codecs in the particular resource group, because

the channel penalty takes into account the distribution of bandwidth (the encoding metric).

36.   Regarding claim 20, Knappe inherently teaches the best fit pool also indicates for each

particular resource group the DSPs that are executing calls that have a first channel penalty

corresponding to the first channel penalty of the codecs in the particular resource group, because

the channel penalty takes into account the distribution of bandwidth (the encoding metric).

37.   Regarding claim 21, Knappe teaches (fig. 1) computer readable medium having stored

thereon sequences of instructions for allocating a plurality of resources to handle tasks, said tasks

utilizing a plurality of different amounts of resources, said tasks being arranged in resource

requirement groups, the tasks in each resource requirement group requiring substantially the

same amount of resources (col. 4, lines 31-49), said sequences of instructions including

instructions for: first determining if a task can be assigned to a resource on a best fit basis

utilizing a best fit pool which indicates the resources that would be substantially fully loaded by

a task in the associated resource group (col. 2, line 41 – col. 3, line 67),

38.   Knappe does not teach if a task can not be assigned on a best fit basis, assigning the task

to a resource utilizing a load balancing pool, which indicates the number of tasks, assigned to

each resource.

39.   Ben Nun teaches fig. 8) if a task can not be assigned on a best fit basis (S830, match),

assigning the task to a resource utilizing a load balancing (S840) pool which indicates the

number of tasks assigned to each resource.

40.   Regarding claim 22, Knappe inherently teaches a computer readable medium having

stored thereon sequences of instructions for allocating a plurality of resources to handle tasks

where the resource requirement groups take into account which codecs have the same first

channel penalty, because the channel penalty takes into account the distribution of bandwidth

(the encoding metric).

41.   Regarding claim 23, Knappe teaches (col. 3, lines 15-67) a computer readable medium

having stored thereon sequences of instructions for allocating a plurality of resources to handle

tasks where the resources are codec utilizing DSP resources.

Conclusion

42.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Roberta A. Shand whose telephone number is 571-272-3161.

The examiner can normally be reached on M-F 9:00am-5:30pm.

43.   If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Huy Vu can be reached on 571-272-3155. The fax phone number for the

organization where this application or proceeding is assigned is 571-273-8300.

44.   Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would

like assistance from a USPTO Customer Service Representative or access to the automated

information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Roberta A Shand
Examiner
Art Unit 2616

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